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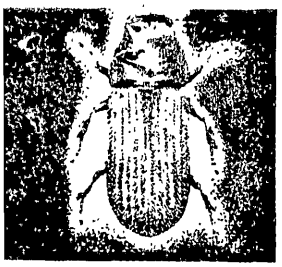

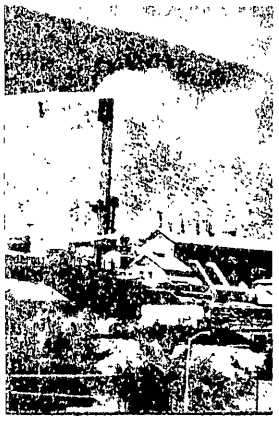

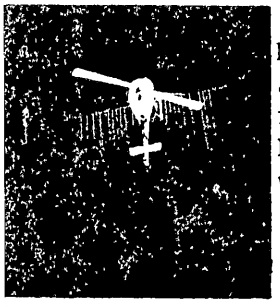

FOREST ENVIRONMENTAL PROTECTION

USDA · FOREST SERVICE · NORTHERN REGION
State & Private Forestry · Missoula, MT 59801

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EVALUATION OF PROPOSED DWARF MISTLETOE CONTROL PROJECTS FOR FISCAL YEARS 1976-1986, UPPER WILLOW CREEK, PHILIPSBURG PLANNING UNIT, MISSOULA DISTRICT, BUREAU OF LAND MANAGEMENT

by

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Plant Pathologist, Forest Environmental Protection

SUMMARY

Many of the nonmerchantable lodgepole pine on proposed control areas are moderately to heavily infested with dwarf mistletoe. Control by removal of all nonmerchantable lodgepole pine, thinning of residual Douglas-fir clumps, and interplanting where needed with lodgepole pine will effectively reduce dwarf mistletoe to an insignificant level and increase volume yields in the future. The cost:benefit ratio of control is favorable.

INTRODUCTION

The Bureau of Land Management (BLM), Missoula District, has proposed a thinning/sanitation on 378 acres for Fiscal Year 1976 in the Philipsburg Planning Unit. These areas were evaluated on April 3, 1975, by Oscar Dooling and Leo Rhein, BLM. They also evaluated the remainder of Upper Willow Creek for future dwarf mistletoe control activities to be accomplished in Fiscal Years 1977-1986.

TECHNICAL INFORMATION

Causal agent.--Lodgepole pine dwarf mistletoe, *Arceuthobium americanum* Nutt. ex Engelm.

Host.--Lodgepole pine, *Pinus contorta* Dougl.

Type of damage.--Reduction of tree vigor, height and diameter growth; and some mortality.

Description of Areas

Location of the proposed project areas is shown in figure 1. The Fiscal Year 1976 proposed projects were logged in 1971 and 1972. The infested trees are overstory lodgepole pine and seedling and sapling reproduction. In addition to the infested lodgepole pine, Douglas-fir saplings with some western spruce budworm infestation were left in scattered clumps throughout the area. Descriptions of specific areas follow:

Area 1.--This area was selectively cut, and many infested lodgepole pine overstory trees were left. Douglas-fir saplings and poles were left in scattered clumps. The proposal is to cut all lodgepole pine over 1 foot in height, thin the Douglas-fir clumps, and interplant with lodgepole pine.

Areas 2 and 3.--These areas were also selectively cut, and the infested residual lodgepole pine are larger than those in Area 1. A commercial post and pole salvage sale is proposed on these areas, followed by the same treatment as on Area 1.

Area 4.--This area was also selectively cut, and the residual lodgepole pine is heavily infested. The same treatment is proposed here as on Area 1.

Areas 5, 6, and 8.--These areas were all selectively cut, and the residual stand is heavily infested. A commercial post and pole salvage sale is proposed on these areas, followed by the same treatment as on Area 1.

Area 7.--This area was clearcut, but quite a few nonmerchantable, infested lodgepole pine whips were left scattered throughout the area. A few scattered Douglas-fir were left on the area. The proposal is to remove all lodgepole pine whips over 1 foot in height, and plant lodgepole pine where needed for a fully stocked stand.

The area proposed for dwarf mistletoe control between FY 1977 and FY 1986 has had some isolated cutting in the past, but has had no formal logging program. The plan is to log the areas within the next 10 years, remove all nonmerchantable lodgepole pine, thin the nonmerchantable clumps of Douglas-fir, and interplant where needed with lodgepole pine.

Some additional roads may be necessary in portions of all areas in order to affect treatment. These roads will be temporary.

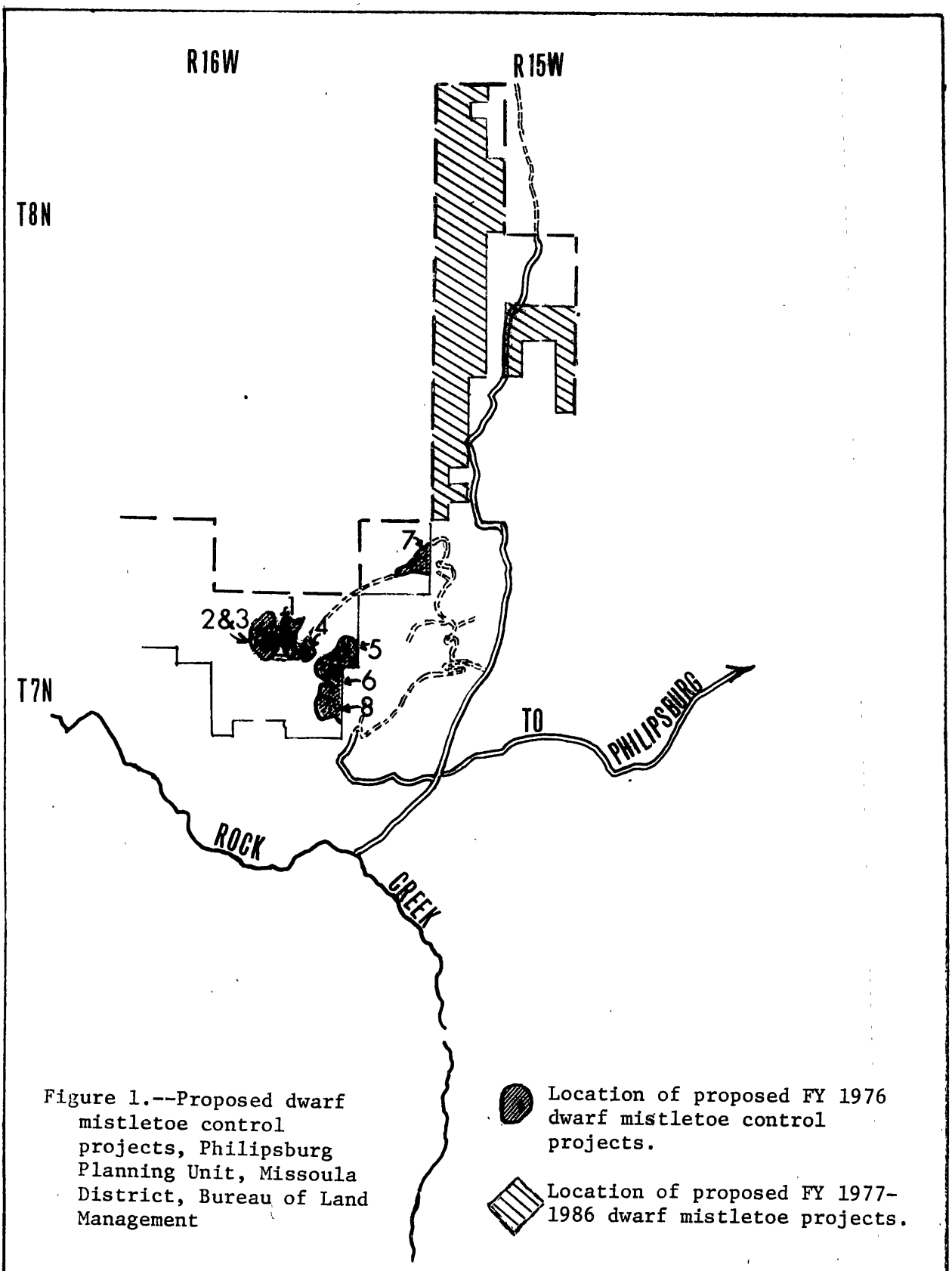

Figure 1.--Proposed dwarf mistletoe control projects, Philipsburg Planning Unit, Missoula District, Bureau of Land Management

DISCUSSION

Dwarf mistletoe is responsible for the most serious disease losses in the lodgepole pine forests of central Montana. Growth losses of 50 percent or more are common. Dwarf mistletoe not only causes growth loss and direct mortality, but also predisposes trees and entire stands to attack by other disease organisms and insects. Nonsusceptible species should be favored in thinning sanitation where possible.

Understory trees with visible infections are easy to find and remove, but many trees probably have latent infections (no aerial dwarf mistletoe shoots). These latent infections usually become visible infections 3 to 5 years after thinning. Where there are many nonsusceptible trees present (Douglas-fir), removal of all lodgepole pine makes the presence of latent infections unimportant; they are discussed here to reinforce the planned approach for the areas.

COST:BENEFIT ANALYSIS

A recent analysis for central Montana [1/] shows a cost:benefit ratio of 1:2.42 for control of dwarf mistletoe in lodgepole pine.

These figures were based on conditions at the end of FY 1973, and do not reflect current market conditions. However, market conditions are expected to improve in the future and benefits of dwarf mistletoe control will increase.

RECOMMENDATIONS

Decision for control.--Dwarf mistletoe control is recommended and is both biologically and economically sound.

Control method.--Removal of all merchantable lodgepole pine followed by slashing nonmerchantable lodgepole, thinning of the residual Douglas-fir, and replanting lodgepole pine where needed is the method selected for control. All Douglas-fir heavily damaged by the western spruce budworm will be removed during logging and thinning.

Impact of control on other resources.--Because control will be by mechanical thinning after logging, there will be no additional adverse impact on other resources from the control operations. There may be a significant increase in the amount of forage available for big game or livestock. In general, wildlife habitat will be improved. The relatively large amount of slash will temporarily increase the fire hazard but new roads in some of the areas will make them more accessible and provide for quicker initial attack on fires that do occur.

1/ Dooling, O. J., 1974. Dwarf mistletoe control--why and what? An appraisal of the Northern Region control program. USDA Forest Service, Northern Region Insect and Disease Report No. 74-16.